

SCLOV'YEV, A.I.

Across Australia. Goog. v shkole 25 no.3:15-25 My-Je '62.
(MIRA 15:7)

1. Chlen-korrespondent Akademii pedagogicheskikh nauk RSFSR.
(Australia—Description and travel)

KARFOV, G.V.; SOLOV'YEV, A.I.; ORLOV, V.I., retsenzents; LAKTIONOVA, F.I., retsenzents; RODIONOVA, F.A., red.; KOZLOVSKAYA, M.D., tekhn. red.

[Reader on the physical geography of the U.S.S.R.; nature pictures from the works of literary travellers, and scientists] Khrestomatia po fizicheskoi geografii SSSR; kartiny prirody iz proizvedenii pisatelei, puteshestvennikov i uchenykh. Posobie dlia uchitelia. Moskva, Uchpedgiz, 1963. 403 p. (MIRA 16:12)

(Physical geography)

YESAKOV, V.A.; SOLOV'YEV, A.I.; FEDOSEYEV, I.A., otv. red.;

[Russian geographical explorations of European Russia and
the Urals in the 19th and the beginning of the 20th century]
Russkie geograficheskie issledovaniia Evropeiskoi Rossii i
Urals v XIX - nachale XX v. Moskva, Nauka, 1964. 177 p.
(MIRA 17:11)

GVOZDETSKIY, N.A.; FEDCHINA V.N.; AZAT'YAN, A.A.; DONTSOVA, Z.N.;
FEDOSEYEV, I.A., otv. red., YEASKOV, V.A.; red.; SOLOV'YEV,
A.I., red.

[Russian geographical explorations of the Caucasus and
Central Asia in the 19th and the beginning of the 20th
century] Russkie geograficheskie issledovaniia Kavkaza i
Srednei Azii v XIX - nachale XX v. [By] N.A.Gvozdet'sii i
dr. Moskva: Nauka, 1964. 156 p. (MIRA 17:11)

YESAKOV, V.A.; PLAKHOTNIK, A.F.; ALEKSEYEV, A.I.; FEDOSEYEV, I.A.,
otv. red.; SOLOV'YEV, A.I., red.

[Russian ocean and sea studies in the 19th to the begin-
ning of the 20th century] Russkie okeanicheskie i morskije
issledovaniia v XIX-nachale XX v. Moskva, Nauka, 1964.
158 p. (MIRA 18:1)

NAUMOV, Guriy Vasil'yevich; FEDOSEYEV, I.A., otv. red.; YESAKOV,
V.A., red.; SOLOV'YEV, A.I., red.

[Russian geographical explorations in Siberia in the 19th
century] Russkie geograficheskie issledovaniia Sibiri v
XIX - nachale XX v. Moskva, Nauka, 1965. 146 p.
(MIRA 19:1)

SOLOV'YEV, A.I.

Friction and wear testing of four-way hinged couplings used in
instruments. Priborostroenie no.4:30-31 Ap '56. (MLRA 9:8)
(Couplings) (Links and link-motion) (Instruments--Testing)

SOLOV'YEV, A.I.

~~Grooving and rolling fishplates covering the joints on R-43 rails.~~
Metallurg no.8:22-23 Ag '56. (MIRA 9:10)

1.Starshiy kalibrovshchik Makeyevskogo zavoda imeni Kirova.
(Railroads--Rails--Fastenings) (Rolling (Metalwork))

SOLOV'YEV, A.I.

Friction in roller bearings used in instruments. Priboroostroenie
no.9:21-22 S '56. (MLRA 9:10)

(Bearings (Machinery))

SOV/137-58-8-16860

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8, p 9 (USSR)

AUTHOR: Solov'yev, A.I.

TITLE: Rational Grooving of a 350-2 Continuous Merchant Mill and a 350-1 Staggered Merchant Mill (Ratsional'naya kalibrovka nepreryvnogo sortovogo stana 350-2 i sortovogo shakhmatnogo stana 350-1)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii. Ukr. resp. pravl., 1957, Vol 2, pp 127-137

ABSTRACT: A 350-2 mill has 15 working stands - 10 with horizontal and 5 with vertical rolls. The starting billet measures 80x80 or 106x106 mm, or may be flat to permit rolling (R) of strip, depending upon the shape to be rolled. During the first period of operation of the mill after its start-up, the system of grooving (G) of the rolls was mixed. The first two horizontal stands of the roughing group had box passes, and the remaining stands had oval-square passes. However, this grooving had a number of shortcomings for application to a continuous mill and the plant introduced a system of oval-oval edging passes for R round and reinforcement steels 10 to 30 mm in diameter.

Card 1/2

SOV/137-58-8-16860

Rational Grooving of a 350-2 Continuous Merchant Mill (cont.)

Practical experience over 1.5 years proved the superiority of this system, which made it possible to hold the R procedure constant, significantly to simplify the guide equipment, and eliminate tangling of the strip. Improvement in the G of the 350-1 staggered merchant mill for reinforcement, round, square, and strip steel, and also for fishplates, angles, and channels was also carried out.

S.G.

1. Rolling mills--Performance Equipment
2. Rolling mills--

Card 2/2

130-9-15/21

AUTHOR: Solov'yev, A.I.

TITLE: Riffing the Surface of Roll Passes by Rolling (Rifleniye nakatkov poverkhnosti kalibrov valkov)

PERIODICAL: Metallurg, 1957, Nr 9, pp.30-31 (USSR)

ABSTRACT: A toothed roller has been successfully used to roll a fine rectangular-pyramid pattern on roll-pass surfaces. The tool-steel roller is 150 mm with a 28 mm wide working edge. 4.5 revolutions of the roll are required. Riffled rolls have superior gripping properties, give smoother passage of the work and better surfaces on the finished product. Roll life is increased because of work hardening during riffing and because riffing leads to crazing instead of to deep cracking. There are 3 figures.

ASSOCIATION: Makeyevka; Metallurgical Works (Makeyevskiy Metallurgicheskiy Zavod).

AVAILABLE: Library of Congress.

Card 1/1

POLUKHIN, P.I., doktor tekhn.nauk; ASTAKHOV, I.G., kand.tekhn.nauk;
SOLOV'YEV, A.I., inzh.; FOMENKO, Yu.Ye., inzh.

Investigating the continuous rolling process of angle steel.
Sbor.Inst.stali no.39:132-152 '60. (MIRA 13:7)

1. Kafedra prokatki Moskovskogo ordena Trudovogo Krasnogo
Anameni instituta stali im. I.V.Stalina.
(Rolling(Met. work))

FILATOV, N.V., dotsent, kand. tekhn. nauk; LETOV, N.N., inzh.; SOLOV'YEV, A.I.

Using locomotives with gyroflywheels in large-capacity hydraulic mines. Trudy VNIIGidrouglia no.4:104-111 '64. (MIPA 12:3)

1. Sibirskiy metallurgicheskiy institut (for Filatov).
2. Vsesoyuznyy nauchno-issledovatel'skiy i proyektno-konstruktorskiy institut dobychi uglia gidravlicheskim sposobom i Sibirskiy metallurgicheskiy institut (for Letov, Solov'yev).

SOLOV'YEV, A.I., kandidat tekhnicheskikh nauk.

New closed system stands for testing automobile gear boxes.
Avt.trakt.prom. no.10:10-12 0 '54. (MLRA 7:10)

1. Taganrogskiy radiotekhnicheskii institut.
(Automobiles--Transmission devices)

SOLOV'YEV, A.I., kandidat tekhnicheskikh nauk.

Investigation of the coefficient of efficiency of automobile transmissions. Avt. i trakt. prom. no.2:15-18 F '56.(MLRA 9:6)

1. Taganregskiy radiotekhnicheskiy institut.
(Automobiles--Transmission devices)

SOLOV'YEV, A.I., kand.tekhn.nauk.

Experimental determination of reduced static moments of inertia
for mechanical systems of instruments. Priboroostroenie no.9:24-25
S '57. (MIRA 10:10)

(Moments of inertia) (Mechanics)

SOLOV'YEV, A.I., kandidat tekhnicheskikh nauk.

Friction is a friend and an enemy. Znan.sila 32 no.8:30-32 Ag '57.
(MIRA 10:10)

(Friction)

3-58-2020/33

AUTHOR: Solov'yev, A.I., Dotsent, Candidate of Technical Sciences

TITLE: Conference on Transmissions (Konferentsiya po peredacham)

PERIODICAL: Vestnik Vysshey Shkoly, 1958, # 2, pp 76 - 77 (USSR)

ABSTRACT: In September 1957, an All-Union Conference on Transmissions, convened by Odesskoye oblastnoye pravleniye nauchno-tekhnicheskogo obshchestva mashinostroyteley (Odessa Oblast' Administration of the Scientific-Technical Society of Mechanical Engineers) and the Odesskiy politekhnicheskiy institut (Odessa Polytechnic Institute) took place in Odessa. The conference was attended by 270 delegates from different plants, and scientific and educational institutions.

Professor, Doctor of Technical Sciences V.N. Kudryavtsev delivered a lecture on "Methods of Reducing the Size and Weight of Gear Transmission" in which he explained how this reduction is achieved and the industrial importance of it.

Candidate of Technical Sciences Ya.G. Kistyan (TsNII TMash) reported on the results of Experiments in gear couplings.

A lecture on the best selection of designs and geometry of planetary reducers with an evolvent out-of-pole coupling was delivered by Professor, Doctor of Technical Sciences V.A. Yudin.

Card 1/2

SOLOV'YEV, A.I., dots., kand. tekhn. nauk

New laboratory work on friction in gear mechanisms. Izv. vys.
ucheb. zav.; mashinostr. no. 2:91-97 '58. (MIRA 11:12)

1. Taganrogskiy radiotekhnicheskiy institut.
(Friction) (Gearing--Testing)

SOV/3-58-12-18/41

AUTHOR: Solov'yev, A.I., Candidate of Technical Sciences, Dotsent

TITLE: Instrument-Makers have made a Useful Tool (Priborostroiteli
poluchili khorosheye posobiye)

PERIODICAL: Vestnik vysshey shkoly, 1958, Nr 12, pp 89-90 (USSR)

ABSTRACT: The author gives a review of the book "Parts and Units of
Instruments" by A.D. Nesterenko and P.P. Ornatskiy. The
Publishing Office is Gostekhnizdat UkrSSR.
There is 1 Soviet reference.

ASSOCIATION: Taganrogskiy radiotekhnicheskiy institut (Taganrog Radio-
Engineering Institute)

Card 1/1

~~SOLOVYOV~~ I. I. kand. tekhn. nauk dots.

Investigating friction losses in antifriction bearings operating in
various conditions. Vest. mash. 38 no.3:29-31 Mr '58. (MIRA 11:2)
(Bearings (Machinery))

SOLOV'YEV, A.I., kand.tekhn.nauk, dotsent

Moment of friction, efficiency, and reduced coefficient of friction
of an articulated coupling. Izv.vys.ucheb.zav.; mashinostr. no.1:
78-82 '60. (MIRA 14:5)

1. Taganrogskiy radiotekhnicheskiy institut.
(Couplings)

16.7000

66029 69629

AUTHOR:

Solov'yev, A. I., Docent,
Candidate of ~~Technical~~ Sciences

S/119/60/000/05/COA/014
B014/B007

TITLE:

An Elementary Synthesis of Differential- and Planetary
Mechanisms of Instruments and Apparatus

PERIODICAL:

Priborostroyeniye, 1960, No 5, pp 6-10 (USSR)

TEXT: In the present paper, the kinematic properties and the force proportions of simple differential mechanisms are investigated. In figure 1 various differential mechanisms are outlined. The equation of forces (2) and the equation of moments (3) are set up, and the transmission ratios (4) and (5) are given. Their use as a summation mechanism with two degrees of freedom is shown. Further, mechanisms with one degree of freedom, so-called closed differential gearings, are dealt with. For the purpose of comparing the kinematic possibilities of planetary mechanisms the reduction pointer $\lambda = i_{\max}/i_{\min}$ (i_{\max} is the maximum transmission ratio, i_{\min} is that in a change of the direction in which the force acts) is defined. For the mechanism shown in figure 1, the reduction coefficients are given in table 1. By means of formula (12) the efficiency of a differential is de-

en: 1/2

~~66027~~ 69629

An Elementary Synthesis of Differential and
Planetary Mechanisms of Instruments and Apparatus

2/119/60/000/05/002/014
2014/E007

finer, and for this efficiency equation (13) is derived, in which the losses at the individual elements are taken into account. Table 2 gives formulas for the individual coefficients of friction of the elements of mechanisms from figures 1 and 2. Finally, an example is discussed, and the applications are mentioned. There are 3 figures and 2 tables.

X

Card 2/2

SOLOV'YEV, A.I., kand.tekhn.nauk, dotsent

Some theoretical premises for using the method of mechanical analogies
in experimental investigations of the efficiency of mining machinery.
Izv.vys.ucheb.zav.; mashinostr. no.11:65-76 '60. (MIRA 14:1)

1. Taganrogskiy radiotekhnicheskiy institut.
(Mining machinery—Testing)

SOLOV'YEV, Aleksandr Ivanovich; KOVALENOK, Yevgeniy Vikent'yevich;
VERZIN, Ivan Andreyevich; KOVALEV, Nikolay Aleksandrovich;
VOL'MIR, R.I., red.

[Designs of mechanisms for automatic control devices, measuring and computing equipment] *Raschetny mekhanizmov avtomatiki, izmeritel'noi i schetno-reshaiushchei tekhniki.* Pod red. A.I. Solov'eva. Taganrog, Taganrogekii radiotekhn.in-t, 1961. 215 p.
(MIRA 16:3)

(Automatic control) (Measuring instruments)
(Calculating machines)

SOLOV'YEV, A.I., kand.tekhn.nauk, dotsent

Experimental reduced coefficients of friction for anitfriction
bearings. Izv.vys.ucheb.zav.; mashinostr. no.4:108-112 '61.
(MIRA 14:6)

1. Taganrogskiy radiotekhnicheskiy institut.
(Friction) (Bearings (Machinery))

SOLOV'YEV, A.I., dotsent

Experimental stud: of the coefficient of efficiency of planetary gears on coal cutter-loaders. Izv. vys. ucheb. zav.; gor. zhur. 5 no.3:94-98 '62. (MIRA 15:7)

1. Taganrogskiy radiotekhnicheskiy institut. Rekomendovana kafedroy tekhnicheskoy mekhaniki Taganrofskogo radiotekhnicheskogo instituta.

(Coal mining machinery)
(Gearing--Testing)

SOLOV'YEV, A.I.

Measuring differential mechanisms. Izv.tekh. no.12:19-22
D '62. (MIRA 15:12)
(Measuring instruments)

SOLOV'YEV, A.I.; GEVCNDYAN, T.A., doktor tekhn. nauk, prof.,
retsenzent; GANCHEV, N.N., dots., red.; AKIMOVA, A.G.,
red.izd-va; DEMKINA, N.F., tekhn. red.

[Laboratory manual on the theory of mechanisms and parts
of instruments] Laboratornyi praktikum po teorii mekha-
nizmov i detaliam priborov. Moskva, Mashgiz, 1963. 143 p.
(MIRA 17:1)

LITVINOV, L.N., kand.tekhn.nauk; SOLOV'YEV, A.I., inzh.; IERUSALIMOV, Ye.P.,
inzh.

Driving piles without a pile driver using the UR-1250 diesel
hammer. Transp. stroi. 13 no.2:17-18 F '63. (MIRA 16:3)
(Piling (Civil engineering))

SOLCV'YEV, Aleksandr Ivanovich; KOSENKO, I.A., dots., otv. red.;
KORNILOV, Ye.A., red.

[Theory of simple computing and measuring mechanisms]
Teoriia prosteshikh schetno-reshaiushchikh i izmeritel'-
nykh mekhanizmov. Rostov-na-Donu, Izd-vo Rostovskogo
univ., 1964. 61 p. (MIRA 18:6)

SOLOV'YEV, A.I., doktor tekhn. nauk, prof.

Self-loading with simultaneous suspension of the reduced moment
of friction of coaxial reducing gears in a closed force circuit.
Izv. vys. ucheb. zav.; mashinostr. no.6:83-85 '65.

(MIRA 18:8)

1. Taganrogskiy radiotekhnicheskiy institut.

SOKOLOV, V.M. Prinimal uchastiye MYSHETSKAYA, Ye.M.; SHCHERBAV, S.I., red.; BASHLAVINA, G.N., red.; BIBIK, A.Ye., red.; ZASLAVSKIY, I.I., red.; KONDRAT'YEV, B.A., red.; MYASISHCHEVA, Ye.I., red.; SOLOV'YEV, A.I., red.; STROYEV, K.F., red.; SCHASTNEV, P.M., red.; YANANKOVA, A.I., red.; TEREKHNOV, N.M., red.; LOBZOVA, N.A., red.

[Atlas of Moscow Province] Atlas Moskovskoi oblasti. Moskva, 1964. 12 p. (MIRA 18:3)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye geodezii i kartografii.

9.4310

S/108/62/017/007/002/008
D288/D308

AUTHORS: Setyukov, L. I., Solov'yev, A. K., Members of
the Society (see Association)

TITLE: Transient and steady-state processes in a class
D transistor amplifier

PERIODICAL: Radiotekhnika, v. 17, no. 7, 1962, 19-25

TEXT: The operational characteristics of a switching transistor with a reactive collector load are not defined by the intersection of a straight load line with the $I_c \dots U_c$ family of curves, as in the case of a resistive load, but by a load loop of which the position depends on the relative frequency and amplitude of switching pulses with respect to the time constants of the reactive load--R and C in parallel. Charge- and discharge time constants are expressed in terms of R, C, and differential output conductivities. Of main interest is the case of a pulse

VB

Card 1/3

Transient and steady-state...

S/108/62/017/007/002/008
D288/D308

repetition frequency high enough to prevent discharge, resulting in a loop shift towards the origin. An analysis with the aid of Laplace transforms yields a formula for U_{out} in terms of R , I_c , pulse repetition frequency, occupancy, and normalized (dimensionless) time n ; one part only of the expression is a function of n and describes the transient process; the second part is independent of n and corresponds to the steady state. Close agreement is obtained between calculated and experimental responses. A similar analysis is performed for the R and L series circuit, relevant time constants being expressed in terms of R , L , and transistor saturation resistance. It is advisable to protect the transistor with a catching diode across the load. Formulas for $I_{c \max}$ and $I_{c \min}$ are derived and employed to construct a theoretical response curve, again agreeing closely with experiment. There are 9 figures. ✓B

Card 2/3

Transient and steady-state...

S/108/62/017/007/002/008
D288/D308

ASSOCIATION: Nauchno-tehnicheskoye obshchestvo radiotekhniki
i elektrosvyazi im. A. S. Popova (Scientific and
Technical Society of Radio Engineering and Elec-
trical Communications im. A. S. Popov) [Abstract-
er's note: Name of Association taken from first
page of journal.]

SUBMITTED: June 16, 1961

VB

Card 3/3

ACCESSION NR: AP4029461

S/0108/64/019/004/0052/0056

AUTHOR: Setyukov, L. I. (Active member);
member)

Solov'yev, A. K. (Active

TITLE: Frequency characteristics of a class D transistorized amplifier

SOURCE: Radiotekhnika, v. 19, no. 4, 1964, 52-56

TOPIC TAGS: amplifier, transistorized amplifier, class D transistorized
amplifier, frequency characteristic, pulse duration modulation

ABSTRACT: A class D amplifier which consists of a modulator and an amplifier stage is theoretically considered. The modulator converts the signal into a sequence of pulses whose height and repetition frequency are constant but whose duration is proportional to the signal value (pulse-duration modulation). The pulses so obtained are amplified by the switch-mode amplifying stage. Formulas are developed for the frequency characteristics of a single-cycle

Card 1/2

ACCESSION NR: AP4029461

transistorized amplifier operating into an RL or RC load. This formula describes the amplitude-frequency characteristic for an RL load:

It is claimed that the formulas obtained for the amplitude-frequency and phase-frequency characteristics for an RL-load amplifier were verified experimentally, with satisfactory agreement between the experimental and theoretical curves. This is taken as proof of the validity of the theoretical results. Orig. art. has: 5 figures and 13 formulas.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi (Scientific and Technical Society of Radio Engineering and Electrocommunication)

SUBMITTED: 02Oct62

DATE ACQ: 30Apr64

ENCL: 00

SUB CODE: EC

NO REF SOV: 004

OTHER: 000

Card 2/2

NEZGOVOROV, L.A.; SOLOV'YEV, A.K.

Cold resistance of germinating seeds and soil pathogenicity [with summary in English]. Fiziol. rast. 4 no.6:489-501 M-D '57. (MIRA 10:12)

1. Institut fiziologii rasteniy im. K.A. Timiryazeva AN SSSR, Moskva.
(Germination)
(Plants, Effect of temperature on)
(Soil micro-organisms)

NEZGORVOROV, L.A.; SOLOV'YEV, A.K.

Cold resistance of plants and soil pathogenicity [with summary in English]. Fiziol.rast. 5 no.5:424-433 S-O '58. (MIRA 11:11)

1. Institut fiziologii rasteniy imeni K.A. Timiryazeva AN SSSR, Moskva.
(Plants, Effect of temperature on) (Soil micro-organisms)

NEZGOVOROV, L.A.; IBRAGIMOV, Sh.I.; SOLOV'YEV, A.K.

Reducing the pregermination death of seeds of thermophilic plants
at low temperatures. Fiziol.rast. 8 no.3:361-370 '61. (MIRA 14:5)

1. Institut fiziologii rasteniy im. K.A.Timiryazevskoy Akademii nauk
SSSR, Moskva i Institut genetiki i fiziologii rasteniy AN UzSSR,
Tashkent.

(Soil temperature) (Seeds)

1. The first of these is the

question of the nature of the

information which is to be

L 51292-65 EEC(b)-2/EEC(k)-2/EWT(1)/EWA(h)/T Pm-4/Pz-6/Psb IJP(c)
ACCESSION NR: AP5009075 UR/0108/65/020/003/0047/0053
621.382

AUTHOR: Solov'yev, A. K. (Active member)

TITLE: Dissipation capacity of a transistor under pulsed operating conditions

SOURCE: Radiotekhnika, v. 20, no. 3, 1965, 47-53

TOPIC TAGS: transistor, transistor dissipation, pulse transistor

ABSTRACT: The operation of a transistor in a pulsed amplifier terminated by a resistance-capacitance or a resistance-inductance is theoretically considered. Square pulses with a period shorter than the load-circuit time constant are assumed. The energy evolved in the collector of closed and open transistors is estimated (formulas 9 and 11); the effect of the switching frequency on this energy is investigated (formulas 16 and 17). The formulas are valid if the pulse rise and fall times are much shorter than the pulse duration. Orig. art. has: 7 figures and 33 formulas.

Card 1/2

L 51292-65

ACCESSION NR: AP5009075

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi
(Scientific and Technical Society of Radio Engineering and Electrocommunication)

SUBMITTED: 27Aug63

ENCL: 00

SUB CODE: EC

NO REF SOV: 003

OTHER: 001

Card

2/2

NEZGOVOROV, I.A.; SOLOV'YEV, A.K.

Effect of low temperatures and pathogenic soil microflora on
the water uptake of thermophilic plants. Fiziol. rast. 12
no.3:500-515 My-Je '65. (MIRA 18:10)

1. Institut fiziologii rasteniy imeni K.A. Timiryazeva AN SSSR,
Moskva.

NEZGOVOROV, L.A.; SOLOV'YEV, A.K.

Increasing the field frost resistance of corn by treating the seeds with large amounts of TMTD. Fiziol.rast. 12 no.6:1093-1103 N-D '65. (MIRA 18:12)

1. Institut fiziologii rasteniy imeni K.A.Timiryazeva AN SSSR, Moskva. Submitted June 19, 1965.

ACC NR: AF6029050

SOURCE CODE: UR/0413/66/000/014/0005/0005

INVENTOR: Korobov, V. I.; Panin, Ye. I.; Prusov, N. K.; Filippov, V. I.; Solov'yev, A. K.

ORG: None

TITLE: A device for checking the thickness of an enamel film. Class 42, No. 183956 [announced by the Independent Technological Design Office for Microconductors (Samostoyatel'noye konstruktorsko-tekhnologicheskoye byuro po mikroprovodam)]

SOURCE: Izobret prom obraz tov zn, no. 14, 1966, 85

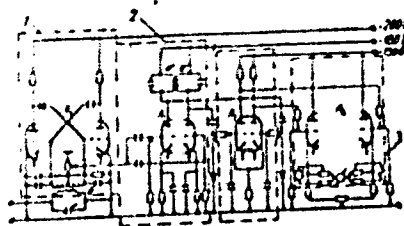
TOPIC TAGS: surface film, protective coating, measuring instrument

ABSTRACT: This Author's Certificate introduces a device for checking the thickness of an enamel film which may be used during enamel coating of wire. The unit contains a capacitance pickup connected to a self-excited oscillator. A high-frequency amplifier, detector, DC amplifier with cathode follower and an indicator are connected in series to the oscillator output. The circuit of the device is simplified and measurement accuracy is improved by using a high-frequency oscillator with a load in the high-frequency amplifier in the form of high-Q stagger-tuned tanks with symmetric resonance curves and a narrow passband. An unblanced signal appears at the load output which is proportional to the change in thickness of the enamel film shown by the indicator.

UDC: 531.717.55

Card 1/2

ACC NR: AP6029058



1--self-excited oscillator; 2--high-frequency amplifier; 3--indicator

SUB CODE: 13, 11/ SUBM DATE: 12Apr65

Card 2/2

SOLOV'YEV, A.L.; SHENSTNEV, A.E.; IVANOV, I.I.; PARSHIN, A.N.; GORYUKHINA,
T.A.

Some data and considerations on possible means of chemotherapy for
melanomas. Vop. onk. 6 no.6:88-89 Je '60. (MIRA 14:3)
(TUMORS) (TYROSINE) (CARBON--ISOTOPES)

IVANOV, I.I.; KOLOV'YEV, A.L.; GAVRILENKO, I.S.

Tyrosinase test and its possibilities in the study of antimelanin properties of bis(p-chloroethyl) amino derivatives of pyrocatechol and tyrosine. Vop. onk. 10 no.6:82-84 '64.

(MIRA 18:3)

1. Kafedra biokhimii (zav. - chlen-korrespondent AMN SSSR prof. I.Ivanov) Voenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova. Adres avtorov: Leningrad, K-9, Pirogovskaya naberezhnaya, 1, kafedra biokhimii Voenno-meditsinskoy ordena Lenina akademii imeni Kirova.

VLOVENKO, V.M.; IVANOV, I.I.; BOBKOVA, V.H.; GAVRILENKO, I.S.; IVANOV, A.I.;
SOLOV'YEV, A.L.; RUMYANTSEVA, L.N.

Possibility of applying 3-(3,4-dihydroxyphenyl)alanine (DOPHA)
as a mediator introducing radioisotopes into melanoma. Dokl.
AN SSSR 164 no.1:95-98 S '65. (MIRA 18:9)

1. Radiyevyy institut im. V.G. Khlopina i Voenno-meditsinskaya
akademiya im. S.M. Kirova. 2. Chlen-korrespondent AN SSSR. (for
Vdovenko).

SOLOV'YEV, A.M.

...the following scientific works, popular science
...have been submitted for competition for State Prizes for
... (Moscow, 1954)

Name	Title of Work	Nominated by
<u>Solov'yev, A.M.</u>	"Educational Drawing"	Moscow State Art Institute imeni
Smirnov, G.B.		V.I. Surikov and Moscow City
Alekseyeva, Ye.S.		Pedagogical Institute imeni
		N.P. Potemkin

PETRENIKO, V.G.; SOLOV'YEV, A.M.

Determination of the mechanical strength of coke in a drum.
Koks i khim. no.2:29-31 '60. (MIRA 13:5)

1. Orsko-Khalilovskiy metallurgicheskiy kombinat.
(Coke)

SOLOV'YEV, A.M.

Industrial carbonization of charges comprising particles and a
large proportion of Karaganda coals. Koks i khim. no.2:6-8 '61.
(MIRA 14:2)

1. Orsto-Khalilovskiy metallurgicheskii kombinat.
(Coal—Carbonization)

SC 117, A.M.

70-4-8/16

AUTHORS: Vertsner, V.N., Kel'ner, N.A. and Solov'yev, A.M.

TITLE: The Formation of Oxides in Lead Sulphide Films and Photoresistances. (Obrazovaniye okislov v sernistosvintsovykh sloyakh i fotosoprotivleniyakh).

PERIODICAL: Kristallografiya, 1957, Vol.2, Nr 4, pp.497-502 (USSR)

ABSTRACT: Electronographic investigations of PbS sublimates, obtained in the form of thin unsupported films and as layers of about 1 μ m thickness on glass, showed that when in thin layers PbS transforms at 340° to a stable oxide, which has the lanarkite lattice, but which differs from it in composition. At 450° and above PbS goes to another stable oxide 4PbO.PbSO₄. The rate of oxidation depends on the temperature and on the type of sublimate. The formation of an oriented layer of lanarkite, the crystals of which on subsequent heating lose their orientation precedes the formation on the surface of a film of PbO₂ and PbO.PbSO₄. The appearance of sub-layers, richer in PbO, proceeds after the formation of the layer which usually occurs in the surface structure of sensitive photoresistances. The differences observed in the course of oxidation of the free films and the sublimates of PbS on glass are most probably conditioned by the differences in the thickness and structure of the layers and the

Card 1/2

70-4-8/16

The Formation of Oxides in Lead Sulphide Films and Photoresistances.

existence of different conditions for the interaction of the PbS with the atmospheric oxygen. Tables of the observed powder pattern spacings are given together with reproductions of the patterns. Acknowledgements are made to Acad. A. A. Lobachev. There are 2 tables, 1 figure, 5 plates and 19 references, 7 of which are Slavic.

SUBMITTED: March 12, 1957.

AVAILABLE: Library of Congress.

Card 2/2

VORONIN, N.I., inzh.; KRASOTKINA, N.I., inzh.; MARSHAK, Yu.L., inzh.;
SOLOV'YEV, A.M.; PSHENKO, V.A., inzh.; KULIK, A.I., inzh.

Use of carborundum packing compounds for lining furnaces with
liquid slag removal systems. Elek.sta. 33 no.12:2-5 D '62.
(MIRA 16:2)

(Boilers)

(Furnaces)

S/048/63/027/003/021/025
B106/B238

AUTHORS: Il'in, M. M. Solov'yev, A. M., Vertsner, V. N.,
Dutov, G. G., Kolchev, B. S., and Toporkov, S. A.

TITLE: A commercial MAP-1 (MAR-1) instrument for X-ray
microanalysis

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,
v. 27, no. 3, 1963, 420-426

TEXT: This paper describes in detail a new MAP-1 (MAR-1) X-ray micro-analyzer developed and tested in the Krasnogorskiy mekhanicheskiy zavod (Krasnogorsk Machine Plant). The instrument consists of the recorder, and of the microanalyzer itself, comprising the electronoptical system providing the electron probe, 2 X-ray spectrometers, a specimen chamber with an optical microscope, the electrical input circuit, and the vacuum system. The electron source is a three-electrode gun with an automatic negative shift. The optical microscope makes it possible to observe the surface of the specimen at a magnification of 450 X, the resolution being $\leq 1\mu$. The non-vacuum spectrometer analyzes X-rays with a wave-

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S/048/63/027/003/021/025
B106/B238

A commercial ...

length of up to 1.5 \AA , and the vacuum spectrometer those from 1.5 to 10 \AA . The spectra are analyzed using Johann's method. The Bragg angles range from 18 to 40° . The analyzer crystals are {1340} quartz crystals with a radius of curvature of 500 mm . The diameter of the X-ray source is $1-2 \mu$; this value depends on the diameter of the electron probe, which is $\leq 1 \mu$. The amperage in the focused probe, is about 10^{-6} A and the current stability amounts to 0.5% per hour. The instrument makes determinations on the specimen possible in the $1 - 2 \mu$ range. When the specimen is impermeable the change in the Bragg angle of the elements from Mg to U can be determined by using both spectrometers. The distribution of the element in the specimen to be determined in the given direction can also be determined. This is done by displacing the specimen under the electron probe with an electric motor at a fixed Bragg angle corresponding to a characteristic frequency. The dispersion and sensitivity of the instrument were studied; the sensitivity in an analysis of copper via the K_α doublet was $< 0.1 \%$. There are 8 figures.

Card 2/2

ACC NR: AF6015757

SOURCE CODE: UR/0048/66/030/000754/0757

AUTHOR: Vortanov, V.N.; Gorling, V.E.; Zenov, B.K.; Krupchatkin, V.D.; Omelin, V.M.;
Solov'yov, A.M.; Toporkov, S.A.; Ustimonko, V.V.

ORG: none

TITLE: An x-ray microanalyzer featuring recording without a crystal Report, Fifth
All-Union Conference on Electron Microscopy held in Sverdlovsk 6-8 July 1965

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 5, 1966, 754-757

TOPIC TAGS: x ray analysis, proportional counter, special purpose computer

ABSTRACT: An x-ray microanalyzer is described in which the x rays are recorded directly with a proportional counter without the use of a crystal diffraction x-ray spectrometer. This type of recording has the advantages of simplicity and high sensitivity, and the disadvantage of low resolving power. The electron-optical system of the instrument provides a 3-5 μ diameter probe with a current of about 1 μ A. Adjustment is facilitated by an optical microscope with a resolution of 3 μ and a working distance of 10 mm, which can be focused by means of a lever without breaking the vacuum. Type CFM-1 sealed off proportional counters as well as flow-type counters have been employed with this instrument. These counters with their associated circuits cannot resolve the K lines of neighboring elements. When the concentrations of neighboring elements

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1 30551-46
ACC NR: AFG015757

is to be determined, the counting rate versus pulse height curve is resolved mathematically into three curves, each representing the contribution of one of three neighboring elements. This resolution is effected automatically by a computing circuit, the operating principle of which is described and is based on a modification of the technique proposed by R.M.Dolby (Proc. Phys. Soc., 73 81 (1959)). The error in determining concentrations of neighboring elements is about 20 %; this large error is due to the long time required for the determination (at least 40 minutes) together with the instability of the proportional counter, the amplifier, and the differential discriminators. When the elements to be determined differ in atomic number by more than 4 or 5 units the different K lines are directly resolved and the error of the determination is not more than 5 %. Under these conditions the computing circuit can be used as a three-channel pulse analyzer for the simultaneous recording of the K line intensities of three different elements. Orig. art. has: 3 formulas and 5 figures.

SUB CODE: 20/

SUM DATE: 00/

ORIG REF: 000/

OTH REF: 005

Card 2/2/112

POLYANSKIY, V.A.; SOLOV'YEV, A.M.

Comparative efficiency of converter systems. Trudy LIEI
no.51:213-226 '64. (MIRA 18:11)

MARSHAK, Yu.L., inzh.; SIZIN, P.R., inzh.; SOLOV'YEV, A.M., inzh.; PSHENKO,
V.A., inzh.; KHAR'KIN, Yu.A., inzh.

Adjustment and operation of the TP-230-6 boiler with vertical cyclone
preliminary furnaces operating on anthracite culm. Elek. sta. 34 no.
6:17-22 Jo '63. (MIRA 16:9)

(Boilers) (Electric power plants)

SOLOV'YEV, A.M.; VERTSNER, V.N.; IL'IN, M.M.; TOPORKOV, S.A.; KOLCHEV, B.S.;
DUTOV, G.G.

Industrial X-ray spectral microanalyzer MAR-1. Izv. AN SSSR.
Ser. fiz. 27 no.9:1162-1165 S '63. (MIRA 16:9)
(X-ray spectroscopy)

DUTOV, G.G.; SOLOV'YEV, A.M.

Selection of optimum operating conditions for electron-optical
probing systems. Izv. AN SSSR. Ser. fiz. 27 no.9:1158-1161
S '63. (MIRA 16:9)

(Electron optics)

DUTOV, G.G.; SOLOV'YEV, A.M.; TOPORKOV, S.A.

Experimental setup of nonaxisymmetric optics for probing systems.
Izv. AN SSSR. Ser. fiz. 27 no.9:1154-1157 S '63. (MIRA 16:9)
(Electron optics)

SOLOV'YEV, A.M.; VERTSNER, V.N.

Problems arising in designing an X-ray microanalyzer. Izv.AN SSSR.
Ser.fiz. 25 no.6:691-694 Je '61. (MIRA 14:6)
(X-ray microscope)

S/048/60/024/04/02/009
B006/B017

AUTHORS: Solov'yev, A. M., Vertsner, V. N.

TITLE: An Instrument for X-Ray Spectrum Microanalysis 21

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960,
Vol. 24, No. 4, pp. 362-366

TEXT: The present article is a reproduction of a lecture delivered at the 4th All-Union Conference on X-Ray Spectroscopy (Rostov-na-Donu, June 29 - July 6, 1959). In the introduction the authors describe the development and construction of an instrument for local X-ray microanalysis described in the following. A total view of this instrument, which was completed in 1959, is shown in Fig. 2 (photo); Fig. 1 gives a schematical representation. The instrument consists of four parts, i.e. the electron optical system, the electron probe, the X-ray spectrograph, and the optical system for the visual observation of the zone investigated. The electron optical system consists of an electron gun and a block of two electromagnetic lenses. The individual parts are described in detail. The X-ray spectrograph (shown in Figs. 2 and 3) is also

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An Instrument for X-Ray
Spectrum Microanalysis

S/048/60/024/04/02/009
B006/B017

described. It makes it possible to employ both the reflection- and the "penetration" method. It was constructed in a manner such that a vacuum spectrographic attachment could be applied (Fig. 4), which made it possible to analyze even light elements. The instrument itself is designed for the local detection of elements, from magnesium to uranium. Quartz plates of a radius of 500 mm served as analyzing crystal. They were arranged parallel to the (1140) plane for the penetration method, parallel to the (0001) plane for the reflection method, and parallel to the mica (100) plane. Experiments were also made with LiF crystal (200). X-Radiation was recorded by Geiger counters. There are 4 figures and 8 references: 3 Soviet, 2 American, 1 British, and 1 Dutch.

✓C

Card 2/2

AUTHORS: Solov'yev, A. M., Vertsner, V. N. SOV/48-23-6-20/28

TITLE: The Use of the Electron Microscope EM-3 for Carrying out a Local X-ray Spectral Analysis (Primeneniye elektronnoy mikroskopa EM-3 dlya provedeniya lokal'nogo rentgeno-spektral'nogo analiza)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 6, pp 750-753 (USSR)

ABSTRACT: On the basis of papers by Castaing (Refs 1-3), Borovskiy and Il'in (Refs 4-7) used the electronograph EM-4 for the purpose of carrying out local X-ray spectral analyses. At the Gosudarstvennyy opticheskiy institut (State Optical Institute) a similar device was constructed by means of the electron microscope EM-3. It consists essentially of four parts: the electron-optical system, the X-ray spectrograph, the optical system for the investigation of the object, and the recording system. The device is shown by figure 1 and is discussed in detail. For the purpose of controlling the electron beam, a fluorescent crystal was used, which had been supplied by V. V. Kuprevich. The principle of the spectrograph is shown by figure 2, and its mode of operation is discussed. The instrument

Card 1/2

The Use of the Electron Microscope EM-3 for Carrying out a Local X-ray Spectral Analysis SOV/48-23-6-20/28

makes it possible to investigate the X-ray spectrum of the two phases of a binary solution. The results obtained by measurements carried out of Co, Ni, Cr, W and Mo with slight impurities are shown in a diagram (Fig 4). The results of these investigations show practicability of this unit. There are 4 figures and 8 references, 5 of which are Soviet.

Card 2/2

AUTHORS: Vertsner, V.N. and Solov'yev, A.M.

SOV/61-5-1-14/19

TITLE: Use of the EM-3 Electron Microscope for X-ray Spectral Microanalysis
(Ispol'zovaniye elektronnoy mikroskopa EM-3 dlya provedeniya rentgenospektral'nogo mikroanaliza)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 1, pp 83-85 (USSR)

ABSTRACT: In 1954 the authors started to work on the possibility of using the EM-3 electron microscope for local X-ray spectral analysis. The apparatus developed consists of three main parts: an electron-optical system, an X-ray spectrograph and a recording system. The electron-optical system uses the EM-3 electron microscope (Fig 3). This system is in the form of a vertical column, consisting of an electron gun, and condensing, projecting and objective lenses. The sample is attached to the stage of the EM-3 microscope which may be moved by means of an electric motor when a particular place on the sample has to be studied. The X-rays excited by the electron beam of the EM-3 microscope leave through a window with low X-ray absorption. The X-ray emission is analysed by means of a bent-crystal spectrograph (Fig 2). The X-ray spectrum is recorded using a Geiger-Müller counter with subsequent amplification. Pulses from the counter are integrated and are fed to a self-recording electronic voltmeter. The diameter of

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SOV/51-5-1-14/19

Use of the EM-3 Electron Microscope for X-Ray Spectral Microanalysis

the X-ray source at the electron beam focus (which was less than 1 μ in size) was about 1-2 μ in diameter. The resolving power of the spectrograph in that region of the spectrum where the Cu K α -doublet occurs was found to be 0.6 X-units. Using the apparatus described chemical composition of separate phases of 2-phase cobalt alloys with Cr, W, Ni and other elements were obtained (Fig 4). The authors thank A.A. Lebedev for advice. There are 4 figures and 7 references, 2 of which are American, 3 Soviet, 1 international and 1 English.

ASSOCIATION: Gosudarstvennyy opticheskiy institut im. S.I. Vavilova (State Optical Institute imeni S.I. Vavilov)

SUBMITTED: August 1, 1957

Card 2/2 1. Electron microscopes - Applications 2. X-ray spectrum analyzers
 - Applications 3. Geiger counters - Applications

SOLOV'YEV, A.M.

Effect of tree and shrub tissue sap on the mycelium of *Fomitopsis annosa* (Fr.) Karst. Bot.zhur. 49 no.11:1652-1655 N '64. (MIRA 18:1)

1. Altavskaya lesnaya opytnaya stantsiya i Kazakhskiy nauchno issledovatel'skiy institut lesnogo khozyaystva, g. Shchuchinsk.

VINOGRADOV, Yuriy Sergeyevich; BOYEV, G.P., professor, retsenzent; SOLOV'YEV, A.N., professor, retsenzent; SEVOST'YANOV, A.G., kandidat tekhnicheskikh nauk, retsenzent; ARKHANGL'SKIY, S.S., redaktor; MEDVEDEV, L.Ya., tekhnicheskiiy redaktor

[Mathematical statistics and their application to studies in textile production] Matematicheskaya statistika i ee primeneniye k issledovaniyam v tekstil'nom proizvodstve. Moskva, Gos. nauchno-tekhn. izd-vo Ministerstva legkoi promyshl. SSSR, 1956. 260 p. (MLRA 10:1)
(Mathematical statistics)

SOLOV'YEV, A.N.

Parasite Canceripustula nocens in the Late Jurassic sea urchins.
Paleont.zhur. no.4:115-119 '61. (MIRA 15:3)

1. Paleontologicheskii institut AN SSSR.
(Caucasus--Parasites--Sea urchins) (Caucasus--Crustacea, Fossil)

SOV/123-59-20-83233

Translation from: Referativnyy zhurnal. Mashinostroyeniye, 1959, Nr 20, p 115 (USSR)

AUTHOR: Solov'yev, A.N.

TITLE: Tooling Machine Parts With Hollow Tools 14

PERIODICAL: Tekhn.-ekon. byul. Sovnarkhoz Zaporozhsk, ekon. adm. r-na, 1958, Nr 3, p 36

ABSTRACT: The efficiency expert of the Pervomayskiy Plant, Yu.E. Teder, suggested and introduced a multiblade hollow tool, which makes it possible to machine parts of cylindrical shape in one operation on the vertical drilling machine. The hollow tool can be used in combination with inside counterbores and recessing reamers. One figure.

B.I.L.

Card 1/1

SOLOV'YEV, A.N.

Development of some early groups of irregular sea urchins. Biol.MOIP.
Otd.geol.38 no.2:161 Mr-Apr 1972

(MIRA 16:5)

(Sea urchins, Fossil)

SOLOV'YEV, A.N.; MELIKOV, O.G.

Turanglaster, a new echinoid genus from Upper Cretaceous sediments
in Turkmenia and Azerbaijan. Paleont.zhur. no.1:105-110 '63.
(MIRA 16:4)

1. Paleontologicheskii institut AN SSSR i Azerbaydzhanskiy institut nefti
i khimii imeni M.Azizbekova, Baku.
(Turkmenistan—Sea urchins, Fossil) (Azerbaijan—Sea urchins, Fossil)

GEKKER, R.F.; AMITROV, O.V.; SOLOV'YEV, A.N.

Rocky shore of the Fergana Paleogene bay. Biul. MOIP Otd.
geol. 37 no.6:122 N-D '62. (MIRA 16:8)

SOLOV'YEV, A.N.

Life habitat of irregular sea urchins and possibilities of its
clarification on the basis of morphofunctional analysis. Biol.
MOIP. Otd.geol. 39 no.5:148-149 8-0 '64.

(MIRA 18:2)

S/207/63/000/001/028/028
E032/E114

AUTHOR: Solov'yev, A.N. (Novosibirsk)
TITLE: Experimental determination of the electrical conductivity of liquid sodium, potassium and lithium
PERIODICAL: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no.1, 1963, 158-160

TEXT: The electrical conductivity of these materials is very sensitive to the structure and presence of impurities. Hence experimental data may provide information on the structure and intermolecular forces in the liquids. The electrical conductivity was measured by placing the molten metals in stainless steel capillaries with copper end terminals. The metals were heated by a coil surrounding the capillary, and the temperature was measured by means of a Pt-PtRh thermocouple. The conductivity was determined between room temperature and 1000 °C for Na and Li, and 730 °C for K. The results for sodium may be represented by the formula

$$\rho = 10.01 \cdot 10^{-6} \left[1 + 4.00 \cdot 10^{-3} (t - 100) + 2.32 \cdot 10^{-6} (t - 100)^2 - 0.553 \cdot 10^{-9} (t - 100)^3 + 0.97 \cdot 10^{-12} (t - 100)^4 \right] \text{ ohm.cm.}$$

Card 1/2

Experimental determination of the ... S/207/63/000/001/028/028
E032/E114

It is estimated that the conductivity is determined to within 2.5%. The results are in good agreement with the data of I.F. Freedman and W.D. Robertson (Electrical Resistivity of Liquid Sodium, Liquid Lithium and Dilute Liquid Sodium Solutions, J.Chem.Phys. 34, 1961, 769) in the range 300 - 350 °C. At lower temperatures Freedman's points lie below the curves now given. A particular feature of the method is that the specimen has a reasonably large resistance (~ 1 ohm). There are 3 figures.

SUBMITTED: September 19, 1962

Card 2/2

SOLOV'YEV, A.N.

Use of a Wilson camera for special laboratory work in physics in a
pedagogical institute. Izv. vys. ucheb. zav.; fiz. no.6:58-61 '63.
(MIRA 17:2)

1. Cherkasskiy pedagogicheskiy institut.

SOLOVEYEV, A. N.

SUBJECT
AUTHOR

USSR / PHYSICS

NOVIKOV, I. I., SOLOVEY, A. N., CHABACHPASEVA, E. M., GRUZDEV, V. A.,

PRIDANZEV, A. I., VASENINA, M. J. A.

TITLE

The Heat Transfer and the Thermophysical Properties of Fused Alkali Metals.

PERIODICAL

Atomnaja Energija, 1, fasc. 4, 92-106 (1956)
Issued: 19.10.1956

CARD 1 / 2

PA - 1518

From 1950 to 1955 the authors carried out experimental research work concerning the thermophysical parameters and the heat transfer of fused metals. The present article deals with the most important results obtained in the course of this research work.

Heat transfer: The experimental apparatus consisted of a heat commutator, cooler, pump, consumption meter, and registering valve. The individual components and their functions are discussed. In a series of experiments the heat transfer between liquid sodium and the copper heating surface is investigated. In the course of a second series of experiments the inner surface of the same heat commutator was coated with a nickel layer of about 10μ thickness. Experiments were carried out at a velocity of flow of the liquid sodium amounting to from 0.8 to 11 m/sec and at temperatures of from 140 to 340° C. On this occasion the dimensionless criteria characterizing heat transfer were modified within the following limits:

$Re = 1.5 \cdot 10^4$ to $2.1 \cdot 10^5$, $Pr = (5 \text{ to } 9) \cdot 10^{-3}$, $Pe = 100$ to 1400.

The viscosity of Na, K, Li and of a eutectic mixture of Na and K (25% Na +

3162

HEAT TRANSFER AND THERMOPHYSICAL PROPERTIES
OF MOLTEN ALKALI METALS

I. I. Novikov, A. N.
Solovyov, E. M. Khabakhpashova, V. A. Grudov, A. I.
Priglashev and M. Ya. Vasenina Soviet J. Atomic Energy
4, 545 (1959)

An investigation was undertaken of heat transfer to molten sodium during turbulent flow in a round copper or nickel tube. An interpolation formula was obtained. Experiments were conducted to determine thermal resistance between liquid sodium and a solid wall of copper, nickel, and stainless steel. Methods were developed for measurement of viscosity, temperature conductivity and density of molten metals. Results are given for measurements of these physical parameters for molten alkali metals (sodium, potassium, lithium and the eutectic solution of sodium and potassium) in a broad interval of temperatures. (auth)

AUTHOR: Solov' yev, A. N. 89-12-13/29

TITLE: Thermodynamical Similarity and the Viscosity of Fused Metals
(Termodinamicheskoye podobie i vyazkost' rasplavlennykh metall-
ov)

PERIODICAL: Atomnaya Energiya, 1957, Vol 3, Nr 12, pp. 550-552 (USSR)

ABSTRACT: It follows from the theory of the thermodynamical similarity that the dependence of several physical properties on the parameters of condition for groups of thermodynamically similar materials can be expressed by a universal function of these parameters. For the viscosity of a liquid it can be written down in known approximation $\eta = c \cdot f_1(T/T_{kr})$. But it follows from this that the viscosity of any material of this group can be estimated, if the critical parameters of all thermodynamically similar materials and the course of the curve at least of one of these materials are known. It was tried to isolate the group of thermodynamically similar metals out of the simply atomic liquids of fused metals out of the simply atomic liquids of fused metals by applying all data of publications, and it was done by drawing curves with the ordinate $\ln \eta/\eta_{pl}$ and the abscissa T_{pl}/T for the metals: Na, K, Li, Ru, Cs, Sn, Hg, Sb, Bi and Ga. It becomes evident from the diagram that the experimental points are arranged round 2 curves with deviations in the fusion point.

Card 1/2

262197

36127
S/124/62/000/004/026/030
D251/D301

AUTHORS: Pridantsev, A. I., Rimashevskiy, A. V. and Solov'yev,
A. N.

TITLE: Continuous measurement of the viscosity of liquids

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 4, 1962, 142, ab-
stract 4B899 (Zh. prikl. mekhan. i tekhn. fiz., 1961,
no. 1, 128-132)

TEXT: A description is given of a vibrational method and apparatus
for continuous measurement of the viscosity temperature and pres-
sure. The method is based on the measurement of the amplitude of
the natural oscillations of a plate loaded with the liquid to be
tested. The experimental apparatus consists of two self-induction
coils and a central rod with a probe going down into a glass bea-
ker with two walls, between which the fluid circulates from a ther-
mostat, maintaining constant temperature conditions during the ex-
periment. One coil serves to excite the oscillations provided by
a 'tuning-fork' generator, the other for their registration. Cham-
Card 1/2

Continuous measurement of ...

S/124/62/000/004/026/030
D251/D301

bers are provided for the sharp reduction of electrical, magnetic and other interference (magnetic screens, soft suspension massive resistances, etc.). Stability of working of the electronic scheme is achieved after pre-heating in the flow for 2 - 3 hours. In comparison with other vibrational methods, this method guarantees a much higher degree of precision (0.5 - 1%). With the aid of this method measurements were made of the viscosity of benzol, toluol and ethyl- and n-butyl alcohol at temperatures from 10 - 70°C. The results of the measurements agreed well with the values from the tables. 5 references. /-Abstracter's note: Complete translation._7

Card 2/2

SOLOV'YEV, A. M. (Novosibirsk)

"the results of measuring the electric conductivity of alkali metals at temperatures up to 2000."

Report presented at the Seminar on the Problems of research on thermophysical properties of substances at high temperatures, Novosibirsk, 9-10 April 1963.

1. V. I. V. and M. I. V. (Novosibirsk)

"the dependence of liquid metal viscosity on volume and an improved formula for viscosity determination."

Report presented at the Seminar on the Problems of research on thermophysical properties of substances at high temperatures, Novosibirsk, 9-10 April 1963.

SOLOV'YEV, A.N. (Novosibirsk)

Electric conductivity and specific volume of liquid metals.
PMTF no. 6:153-157 N-D '63. (MIRA 17:7)

ACCESSION NR: AP4000399

S/0294/63/001/001/0045/0049

AUTHOR: Solov'yev, A. N.

TITLE: .Electrical resistance of liquid metals as a function of specific volume

SOURCE: Teplofizika vy*sokikh temperatur, v. 1, no. 1, 1963, 45-49

TOPIC TAGS: liquid metal, alkaline earth metal, atomic electrical resistance, liquid alloy, liquid metal resistivity, liquid alloy resistivity, electrical resistance measurement, sodium, potassium, lithium, francium

ABSTRACT: Supplementing the author's measurements (PMTF, No. 1, 1963) of the electric resistivity of liquid sodium, potassium, and lithium over a wide temperature range, and in view of the extensive experimental material on the electric resistivity of liquid metals and alloys already accumulated, an analysis is made of the dependence

Card 1/3

2

ACCESSION NR: AP4000399

of the electric resistivity on the specific gravity, with an aim at obtaining a theoretical or empirical formula which could be extrapolated to higher temperatures for which reliable experimental data are difficult to obtain. It is suggested that the jump in resistivity during melting is not connected with the destruction of the crystal lattice, and that the atomic electric resistivities of liquid alkali metals are all equal. On this basis, the specific electric resistivity of rhobidium and cesium is calculated from data for potassium and is found to agree with the experimental data, and the density and the electric resistivity of francium, the thermo-physical properties of which are not known at all, are calculated. Orig. art. has: 4 figures, 5 formulas, and 2 tables.

ASSOCIATION: None

SUBMITTED: 00

DATE ACQ: 13Dec63

ENCL: 01

SUB CODE: PH

NO REF SOV: 005

OTHER: 002

Cord 2/3
2

ACCESSION NR: AP4034285

S/0207/64/000/002/0176/0176

AUTHORS: Somyachkin, B. Ye. (Novosibirsk); Solov'yev, A. N. (Novosibirsk)

TITLE: Experimental determination of electrical resistance of liquid alkali metals up to 1000 degrees C

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 2, 1964, 176

TOPIC TAGS: electrical resistance, lithium, sodium, potassium, rubidium, cesium, stainless steel capillary

ABSTRACT: The author works with lithium, sodium, potassium, rubidium and cesium in a stainless steel capillary of length ~ 600 mm and diameter 0.8/0.5 mm from the melting point to 950C or 1000C. Orig. art. has: 1 graph and 1 table.

ASSOCIATION: none

SUBMITTED: 20Nov63

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ENCL: 01

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ENCLOSURE: 01

t, °C	Li	Na	K	Rb	Cs
30	—	—	—	—	37.9
40	—	—	—	22.5	—
50	—	—	—	23.3	39.9
65	—	—	15.0	—	—
100	—	10.01	16.9	27.4	44.9
150	—	11.78	19.5	31.4	49.8
180	25.3	—	—	—	—
200	25.8	13.63	22.2	35.4	55.0
250	27.0	15.56	25.1	39.5	60.3
300	28.3	17.70	28.2	44.6	65.8
350	29.6	19.90	31.5	48.1	71.5
400	30.8	22.22	35.1	52.8	77.5
450	32.2	24.70	38.7	57.7	83.7
500	33.5	27.23	42.6	63.0	90.0
550	34.8	29.94	46.6	68.5	96.6
600	36.1	32.76	50.0	74.1	103.6
650	37.6	35.72	55.5	80.2	110.9
700	39.1	38.87	60.5	86.5	118.3
750	40.6	42.20	66.1	93.2	126.2
800	42.2	45.64	72.2	100.0	134.9
850	43.8	49.36	79.0	107.2	144.6
900	45.5	53.21	86.2	114.8	153.8
950	47.3	57.70	94.0	124.0	166.4
1000	49.0	61.87	102.3	—	—

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